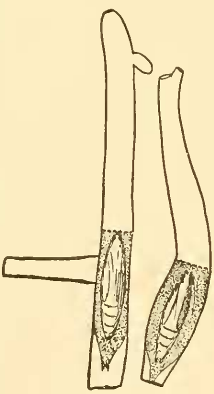
bottom of the brook, and by working my fingers about in the soft mud below them brought them out uninjured. But great was my astonishment on opening one of them to find within a slender, delicate, white larva, looking so small in proportion to the size of the tube that I could not believe it to be the maker, till researches into the other tubes revealed similar occupants in all of them. Fig. 23 represents the mouth parts of one of these larvae, enlarged. The tube in the centre is the labium (spinnaret) which spins the silken threads, the substance used by all caddis-worms to fasten together the materials of their houses, and fabricate the gratings or disks which protect them during pupation.


Fig. 23.

These Plectrocnemia cases occur in colonies, but this spring, 1891, I could not find any. They pupate in May, and the pupa may be found in a swelling of a vertical tube (fig. 24). I do not understand what use the larvae make of the lateral chambers. Some in my aquarium, however, only constructed horizontal tubes, in which they lived and transformed.


Fig. 24.

RHYACOPHILIDAE. In this family the pupa is enclosed in a thin brown leathery cocoon. I have found two species, but I am not sure whether I obtained them in Stony Brook, or in its smaller tributaries. In one of them the case is of no regular shape, being composed of a very few stones, proportionately large.

The other case (fig. 25) is quite peculiar. It is abundant in the Bussey Brook, and I have also found it in Brookline and Dedham. It is about 9 mm. long, roundish oblong in shape, and strongly arched above, and made of coarse sand or gravel. On turning it over, one sees a shelf of fine sand, like the thwart of a boat, across the middle of the case. This disappears during pupation. In Bussey Brook I found one pupa on May 9th, 1891, though most of the cases were still occupied by the larvae.


Fig. 25.

HALISIDOTA CARYAE.

BY CAROLINE G. SOULE, BROOKLINE, MASS.

A mat of eggs was found on the under side of a leaf rather high up in a thorn-tree, on June 28th, 1891, Brookline, Mass. The eggs were close together, about one hundred in number, hemispherical, the flat side being on the leaf. When found they were of a leaden color, and soon each showed a

red streak, then a black dot near the centre of the top, the dot being the head of the larva. On June 29th, they hatched.

The *young larvae* were of a dull white color, with a black dorsal patch on the 1st segment, and a black dot below this on each side. The other segments had, on each side, two large black dots and a small one set in a triangle, and a smaller dot on the stigmatal line. Anal shield black. Head became black. Feet black; props white; anal props dotted with black, very slender. Sparse black hairs all over the body. The black was very shining.

The larvae fed and rested in a close crowd. They were very active, moving very rapidly. They ate only the green pulp of the leaf, and wanted much water. July 3rd, they spun a web on the leaf and all settled on it in rows.

July 5th, *First moult.* Head very large and black, conspicuous. Body as before, except that the sparse hairs were partly white, partly black; and the 2nd and 3rd segments had each two large black warts on each side of the dorsal line and one on the stigmatal line; anal segment had two large black warts instead of being all black. The spiracles were black, and showed clearly. The white color of the body was an opaque, glossy white, like porcelain, and the 2nd and 3rd segments looked very white, having fewer black marks than the others. The hairs were longest near the head, and projected over it. On July 10th they spun a web for moulting.

July 12th, *Second moult.* As before, but larger, and with the hairs longer and denser.

The larvae lived now in two crowds, one on each side of the hickory leaf which I substituted for the thorn, and still ate only the pulp. On July 16 they spun a web on each side of the leaf.

July 18, *Third moult.* Head round, slightly bilobed at top, shining black. Body as before except the hairs. 1st, 2nd and 3rd segments as before. 4th and 10th segments had a longer pencil of black hairs arising from the black wart nearest the dorsal line, on each side, the hairs meeting over the line so as to give the effect of a single pencil. On each side, lower down, was a longer, single pencil, also black. The other segments had the dorsal double pencil, and all had longer white hairs on the sides, these being longest over the head and anal segment.

The larvae now began to eat through the fibre of the leaves, and on July 21st, spun a web.

July 23rd, *Fourth moult.* As before, but larger. July 28th, spun a web.

July 30th, *Fifth moult.* Head, feet, props and venter black. Body more speckled with black, the ground color being greenish white. Short, thick, white pencils on each side of the dorsal black ones, lay close against these, and formed with them a convex ridge along the dorsum. The lateral hairs were less dense and longer. Two thin long, white pencils on 1st, 2nd, 11th and 12th segments, the first two pairs extending over the head, the last two over the anal end.

The larvae ate enormously and moved very fast. When touched vigorously they curled up and rolled off the leaf, but did not mind being jarred or moved. Aug. 5, spun a web.

Aug. 7th, *Sixth moult.* Length $1\frac{1}{8}$ inches, though two or three measured $1\frac{1}{4}$ inches. The hairs were denser on the dorsum, and had a grayer tinge. Otherwise as before.

Aug. 16. They measured $1\frac{1}{2}$ inches

in length, and began to spin cocoons. They spun first a slight net, and covered it with their long hairs laid on lengthwise and lying smooth and flat. Through this net they pushed their short hairs at right angles, or nearly so, with the surface, so that these hairs stood up as if growing on the cocoons, and gave them a rough surface—like that of a head whose hair has been cut very short, but not shaved. The cocoons varied in length from $\frac{7}{8}$ inch to $1\frac{1}{8}$ inches. They were of a regular ovoid shape, and of a gray color from the black and white hairs of the larvae. Some were spun on the side of the tin, some on the cloth over the top of the tin, and more on the under side of the leaves, though with no attempt to draw the leaf over the cocoon.

The hickory trees were so defoliated by these larvae this year, that I destroyed all but twenty of my brood, as soon I was sure what they were. Of the twenty none died.

Aug. 20. The pupa cast the larva-skin.

Pupa. $\frac{5}{8}$ inch long, smooth, stout, larger around the abdomen than around the thorax; with eyes and antennae well marked. Its color was bright tan. There was no anal hook.

A LIST OF SOME OF THE CATALOGUES AND LOCAL LISTS OF NORTH AMERICAN COLEOPTERA.—I (A.-G.).

BY JOHN HAMILTON AND SAMUEL HENSHAW.

In studying the distribution of certain of our species of Coleoptera it has been necessary to go over a considerable part of the American literature; when so doing a memorandum of all lists and catalogues was made and is now published as an aid to others engaged in similar studies.

Some of the lists contain so few species as at first sight to appear unworthy of note, but frequently they include some of the most interesting and valuable records; in fact the value of a local catalogue is often to be estimated not so much by the number of species contained as by the geographical position of the locality itself, and the accuracy of the determinations.

We make no comments on the correctness of the identifications in the various lists. The student can form his own estimate of them.

All lists here quoted have been personally examined unless noted to the contrary.

Notice of any omission will be very welcome.

1 **Anon.** List of Coleoptera [of Canada]. n.p., 1867, 12 p.

1131 species are listed.

2 **Austin**, E. P. Catalogue of the Coleoptera of Mt. Washington, N. H. (Proc. Bost. soc. nat. hist., 1874, v. 16, p. 265-276.)

221 determined and 13 undetermined species are listed; new species are described by Leconte.

3 **Austin**, E. P. Supplement to the check list of the Coleoptera of America, north of Mexico. Boston, 1880, 4 + 67 p.